

IN THE CLAIMS:

Please enter the following claims as amended:

1. (currently amended) A carbon media for storage of hydrogen comprising micro-domain graphitic materials consisting of at least one of materials selected from the group consisting of carbon nanotubes, fullerenes, carbon micro-cones and flat graphitic carbon sheets,

wherein said media includes micro-domain graphitic materials that have a graphitic stacking direction and a domain size and which have been produced by decomposition of hydrocarbons in a reaction chamber connected to a plasma generator in which the hydrocarbons are subjected to a first decomposition step and said plasma generator includes a plasma arc zone, where the hydrocarbons are fed into the decomposition chamber in the vicinity of the plasma arc zone and mixed with the plasma arc, and where the plasma arc zone is operated with adjustable process parameters and the process parameters are adjusted in such a manner that the hydrocarbons do not reach pyrolysis temperature and are only partially decomposed to form polycyclic aromatic hydrocarbons (PAHs), -that the hydrocarbons in the form of PAHs are, after the first decomposition step, mixed with a plasma arc and reintroduced as a part of a plasma gas into a plasma arc zone in a decomposition chamber and subjected to a second decomposition step, where the heat in the plasma arc zone causes the PAHs to be converted into the micro-domain graphitic materials, that the domain size is smaller than 5 [[mm]] μm in diameter or length parallel to a graphitic stacking direction and having a thickness of less than 100 nm in the graphitic stacking direction.

Claims 2.and 3 previously cancelled

4. (previously amended) A media according to claim 1, wherein the media contains micro-domain graphitic materials in the range from 0 to above 90wt%.

5. (previously amended) A media according to claim 4, wherein the media contains more than 90wt% micro- domain graphitic materials.
 6. (previously amended) A media according to any one of claim 1, wherein the media results from dehydrogenation of heavy fuel oil into micro-domain graphitic materials.
 7. (previously amended) A carbon media for storage of hydrogen comprising micro-domain graphitic materials, wherein said media contains open carbon micro-cones with total disclination degrees of at least 60° and/or 120° , corresponding to cone angles of respectively at least 112.9° and/or 83.6° .
- Claims 8. -11 were previously cancelled
- Claim 12 is presently cancelled